Description: A novel cardiac marker that indicates myocardial ischemia.
Timing: Levels can increase within 4 hours of chest pain onset.
Clinical Use: Useful for early detection of acute coronary syndromes

Glycogen phosphorylase exists in various human tissues in three distinct isoenzymes, each named according to its primary site of expression: GPLL in the liver, GPMM in skeletal muscles, and GPBB in the brain. Notably, GPBB is also the predominant enzyme form found in cardiomyocytes. These isoenzymes are produced by different genes and exhibit structural variations that correspond to the metabolic functions of their respective tissues. A comparative analysis of the human glycogen phosphorylase isoforms is provided in Table 1.

The specific affinity of GPBB for myocardial tissue, along with its early release during myocardial ischemia, has garnered significant interest from cardiologists, particularly as there is currently no biomarker with ideal specificity for the early detection of myocardial ischemia or infarction. Recently, GPBB has been proposed as a potential indicator of myocardial injury and even as a marker for reversible myocardial ischemia in the absence of necrosis, although research findings on this topic remain inconsistent. Our recent study involving 46 patients with established coronary anatomy undergoing exercise stress echocardiography revealed that the increase in plasma GPBB concentration was not associated with exercise-induced myocardial ischemia.

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